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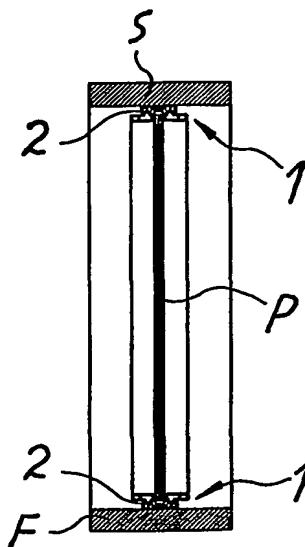
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(54) Title: FRAMESTRUCTURE FOR PARTITION WALLS OF BUILDING ROOMS



(57) Abstract: A frame structure for partition walls (P) of building rooms, comprising a plurality of substantially vertical and substantially horizontal elongate support members (2), which are mutually connected at their ends to define a substantially rigid framework. At least one elongate member (2) comprises a base profile (3) having at least one central portion (4) adapted to define a housing for the peripheral edges (R) of a partition wall (P) and two end portions (6) adapted to engage with lateral profiles (7) for accommodating the peripheral edges (R) of the partition wall (P). A peculiar characteristic of the invention consists in that the central portion (4) is substantially parallel to and offset from a geometric plane (G) defined by the end portions (6), so that the height of the housing (5) is increased, while maintaining the same transverse dimension of the elongate support members (2).

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## FRAME STRUCTURE FOR PARTITION WALLS OF BUILDING ROOMS

Field of the Invention

5 The present invention finds application in the field of indoor furnishings and building in general, and particularly relates to a structure for dividing rooms of buildings as described in the preamble of claim 1.

Prior art

10

A number of room dividing structures are known, which comprise one or more walls of different materials, such as glass, cardboard, plaster and a variety of wood-based composites.

15 IT-VI2000A000153 discloses a structure which comprises a metal frame for vertically supporting one or more flat partition members composed, for instance, of glass plates or plaster-covered wood composite panels. The metal frame comprises a base profile which is affixed by screws on an adjacent wall, on the ceiling or on the floor, optionally with the interposition of an intermediate flat profile. Each base profile extends in a longitudinal direction and comprises a central flat portion and two longitudinal end portions, which, together with the central portion, lie in the same main longitudinal plane. At the end portions, snap means are provided for engagement of corresponding lateral profiles. The latter, as well as the central flat portion of the base profile, define a housing for an edge 20 of a flat partition member or for an auxiliary profile.

25

An apparent drawback of this arrangement is that the housing defined by the lateral profiles and the central flat portion has a relatively small extension in a direction transverse to the main plane, such that the edge of the flat partition 30 member may interfere with the base profile. Such characteristic restricts the possibility of properly and easily positioning the edges of the flat partition members in their respective housings.

An additional drawback of this arrangement is that the base profile has little thickness transverse to the main plane and is unsuitable for connection with the adjacent edges of two flat partition members made of a wood composite or similar materials. The little thickness of the base profile is particularly disadvantageous  
5 when the flat composite wood partition members have external finishing plates.

#### Summary of the invention

A primary object of the proposed invention is to obviate the above drawbacks, by  
10 providing a structure for dividing building rooms, allowing for an easy and practical manufacture and installation.

A particular object is to provide a structure that, during installation, may be easily adapted, by allowing a relatively wide adjustment of the size and mutual position of  
15 its components.

A further object of the invention is to provide a structure that allows to safely support a variety of partition wall types and particularly glass partitions.

20 Another particular object is to provide a possibly complex structure having a relatively small number of modular components, which may be mutually combined and coupled in different manners.

25 A further particular object is to provide a structure that has an aesthetically appealing aspect and is in harmony with the installation environment, even when adjacent composite wood partition walls are provided.

These objects, as well as other objects that will be more apparent hereafter, are achieved, according to claim 1, by a frame structure for partition walls of building  
30 rooms, comprising a plurality of substantially vertical and substantially horizontal elongate support members, which are mutually connected at their ends to define a substantially rigid framework, at least one elongate member comprising a base

profile which has at least one central portion adapted to define a housing for the peripheral edges of a partition wall and two end portions adapted to engage with lateral profiles for accommodating the peripheral edges of the partition wall, characterized in that the central portion is substantially parallel to and offset from a 5 geometric plane defined by the end portions, so as to increase the height of the housing, while maintaining the same transverse dimension of the elongate support members.

This particular arrangement provides an easily installable structure. The position of 10 the partition walls will be easily adjustable thanks to the relatively large size of the housings for the peripheral edges of the partition walls.

Preferably, the elongate support members include at least one upper horizontal profile and at least one lower horizontal profile for supporting a sliding door, which 15 is movable between a closing position and an opening position. Particularly, the upper horizontal profile has a central portion and at least one end portion, which are substantially equal to the corresponding central and end portions of the base profile. Also, the lower horizontal profile has a central portion and an end portion, which are substantially equal to the corresponding central and end portions of the 20 base profile.

Thanks to this particular arrangement, by using a relatively small number of modular components which can be mutually combined and coupled in a variety of manners, a possibly complex structure may be obtained, which is adapted to 25 support one or more room access doors, possibly of the sliding type.

#### Brief Description of the Drawings

Further features and advantages of the invention will be more apparent from the 30 detailed description of a few preferred, non-exclusive embodiments of a structure according to the invention, which are described as non-limiting examples with the help of the annexed drawings, in which:

FIG. 1 is a sectional view of a structure according to the invention;

FIG. 2 is a side view of the structure of FIG. 1;

FIG. 3, FIG. 4, FIG. 5, FIG. 6, FIG. 7 are enlarged views of details of a structure according to the invention;

5 FIG. 8 is a partial enlarged view of a structure according to the invention;

FIG. 9 is another partial enlarged view of a structure according to the invention;

10 FIG. 10, FIG. 11, FIG. 13, FIG. 14, FIG. 17, FIG. 20, FIG. 23 are partial sectional views, taken along a vertical plane, of further embodiments of a structure according to the invention;

FIG. 12, FIG. 15, FIG. 16, FIG. 18, FIG. 19, FIG. 21, FIG. 22 are partial sectional views, taken along a horizontal plane, of further embodiments of a structure according to the invention.

15

#### Detailed description of a preferred embodiment

Particularly referring to the above figures, a frame structure according to the invention is described, which is generally designated with numeral 1, particularly for supporting partition walls P of building rooms. The partition walls P may be 20 made of a glassy material or another material, such as wood, plaster or composite wood, either covered or uncovered.

Structure 1 comprises a plurality of substantially vertical and substantially horizontal elongate support members 2, which are mutually connected at their 25 longitudinal ends to define a substantially rigid framework.

Particularly, at least one elongate member 2 comprises a base profile 3 having at least one central portion 4 adapted to define a housing 5 for the peripheral edges R of a partition wall P and at least two end portions 6. The latter are shaped in 30 such a manner as to allow engagement with lateral profiles 7 for accommodating the peripheral edges R of the partition wall P.

A peculiar aspect of the invention consists in that the central portion 4 is substantially parallel to and offset from a geometric plane G defined by the end portions 6. This allows to increase the height of each housing 5, while maintaining the same transverse dimension of the elongate members 2, and to easily position 5 the corresponding peripheral edge R of the partition wall P.

At each end portion 6, the base profile 3 may have a first appendix 8 and a second appendix 9, which face toward each other and are disposed transversely to the geometric plane G to define a corresponding shaped seat 10.

10

Snap means 11 are further provided on each base profile 3, at the shaped seats 10, to engage the lateral accommodating profiles 7 therewith.

15

Each base profile 3 may further comprise a plurality of holes 12 for the passage of screws 13. The latter will allow to affix the base profile 3 on a partition wall P or on a wall M of the building, or on the ceiling S or on the floor F of the room, as shown, for instance, in FIG. 10. The screws 13 will further allow for accurate adjustment of the positioning distance of the base profile 3 relative to the wall M, or to the ceiling S or to the floor F.

20

Suitable, the structure 1 may further comprise one or more spacer profiles 14 for mutually connecting at least two adjacent panels P', which are part of a partition wall P. Each spacer profile may have two symmetric portions 15, which are substantially equal to the base profiles 3 and are disposed with their geometric planes G in parallel positions. Particularly, each symmetric portion 15 has two end portions 6' and a central portion 4' which is substantially parallel to and offset from a geometric plane G defined by the end portions 6'. At each end portion 6, the base profile 3 may have a first appendage 8 and a second appendage 9, which face toward each other and are disposed transversely to the geometric plane G. 25 Therefore, a corresponding shaped seat 10' will be defined on each end portion 6', for engagement of the lateral accommodating profile 7, as described for the base profile 3.

As a whole, each spacer profile 14 comprises four shaped seats 10' disposed in pairs on each symmetric portion 15 and adapted to accommodate as many lateral accommodating profiles 7. Appropriately, the first appendages 8' and the second appendages 9' of a symmetric portion 15 may be brought to contact with the 5 peripheral edge R of a partition wall, for instance made of a wood composite, whereas the corresponding appendages 8', 9' of the other symmetric portion 15 of the same spacer profile 14 may house a pair of lateral accommodating profiles 7 to engage the peripheral edge R of a glass partition P, as shown in FIG. 9 and FIG. 13.

10

Each spacer profile 14 has such a size that it can be easily positioned horizontally between two adjacent panels P', when the latter are superimposed vertically as shown in FIG. 13 and FIG. 14, or may be inserted, again horizontally, between a partition P and the floor F and/or the ceiling S of the room.

15

Furthermore, each spacer profile 14 may be positioned vertically between two partitions P, possibly of different types, or between a partition P and a wall M of the building, as shown in FIG. 12.

20 Advantageously, the elongate support members 2 may include at least one upper horizontal profile 16, as shown in FIG. 5, and at least one lower horizontal profile 17, as shown in FIG. 6, for supporting a sliding door D, movable between a closing position and an opening position, as shown in FIG. 11.

25 The upper horizontal profile 16 may have a central portion 4" and at least one end portion 6", which are substantially equal to the corresponding central portion 4 and end portion 6 of the base profile 3. Also, the upper horizontal profile 16 may further have a second central portion 18 to increase the rigidity of the profile.

30 Particularly, the upper horizontal profile 16 has at least one first appendage 8" and at least one second appendix 9" which are substantially similar to the corresponding first and second appendixes 8, 9 of the base profile 3. Like for the

base profile 3, the first appendage 8" and the second appendage 9" define a shaped seat 10" which is adapted to accommodate a lateral profile 7 for accommodating the peripheral edges R of a partition wall P.

5 Moreover, the upper horizontal profile 16 has a third appendage 19, which protrudes along a direction substantially orthogonal to the central portion 4.

A rail may be formed on the third appendage 19, for guiding one or more wheels or rollers 21 whose axles are integral with the sliding door D.

10 The lower horizontal profile 17 may have a central portion 4" and at least one end portion 6", which are substantially equal to the corresponding central portion 4 and end portion 6 of the base profile 3, and may further include a longitudinal cavity 22. The latter is shaped to accommodate a lower edge E of the sliding door  
15 D.

The base profile 3 and the lateral accommodating profiles 7 may be combined in different manners, to support a variety of partition types P and, appropriately, one or more hinged doors D', D", as shown in FIGS. 15 - 23. Particularly, as a  
20 preferred embodiment, the structure 1 may include a hinged door D', made of a glassy material or the like, as shown in FIGS. 15 - 17. The structure 1 may further include a hinged door D" made of a wood composite or other similar materials, which is engaged in a first position, as shown in FIGS. 18 - 20 or in a second position, as shown in FIGS. 21 - 23.

25 The above disclosure clearly shows that the frame structure according to the invention achieves the proposed objects and particularly that the position of the central portion relative to the end portions of each base profile allows to form a relatively large housing for the corresponding peripheral edge of a partition wall,  
30 thereby facilitating the positioning and fastening of the partition.

Furthermore, a particular advantageous feature is that all the base profiles, the

spacer profiles, and both the upper and lower horizontal profiles for supporting the sliding door include central and end portions. This feature allows to reduce the number of different components required to provide a wide range of frame structures. For example, the same lateral profile for accommodating the peripheral 5 edges of a partition may be mounted on a base profile, on a spacer profile or on an upper or lower horizontal profile.

The frame structure of this invention is susceptible of a number of changes and variants, within the inventive concept disclosed in the appended claims. All the 10 details thereof may be replaced by other technically equivalent parts, and the materials may vary depending on different needs, without departure from the scope of the invention.

While the frame structure has been described with particular reference to the 15 accompanying figures, the numerals referred to in the disclosure and claims are only used for the sake of a better intelligibility of the invention and shall not be intended to limit the claimed scope in any manner.

## CLAIMS

1. A frame structure for partition walls (P) of building rooms, comprising a plurality of substantially vertical and substantially horizontal elongate support members (2), which are mutually connected at their ends to define a substantially rigid framework, at least one of said elongate members (2) comprising a base profile (3) which has at least one central portion (4) adapted to define a housing (5) for the peripheral edges (R) of a partition wall (P) and two end portions (6) adapted to engage with lateral profiles (7) for accommodating the peripheral edges (R) of the partition wall (P), characterized in that said central portion (4) is substantially parallel to and offset from a geometric plane (G) defined by said end portions (6), so as to increase the height of said housing (5), while maintaining the same transverse dimension of said elongate support members (2).
- 15 2. A structure as claimed in claim 1, characterized in that, at each of said end portions (6), said base profile (3) comprises a first appendix (8) and a second appendix (9), which face toward each other to define a corresponding shaped seat (10).
- 20 3. A structure as claimed in claim 2, characterized in that said first (8) and second (9) appendixes are disposed transverse to said geometric plane (G).
- 25 4. A structure as claimed in claim 2, characterized in that each of said base profiles (3) includes snap means (11) at said shaped seats (10) for engagement of said lateral accommodating profiles (7).
- 30 5. A structure as claimed in claim 1, characterized in that each of said base profiles (3) has a plurality of holes (12), for fastening thereof by screws (13) on a partition wall (P), or on a wall of the building, or on the ceiling (S) or floor (F) of the room.
6. A structure as claimed in claim 1, characterized in that it further

comprises one or more spacer profiles (14), adapted to mutually connect at least two adjacent panels (A), being part of a partition wall (P), each of said spacer profiles (14) having two symmetric portions (15) substantially equal to said base portions (3).

5

7. A structure as claimed in claim 6, characterized in that said symmetric portions (15) of each of said spacer profiles (14) are disposed with their respective geometric planes (G) in substantially parallel positions.

10

8. A structure as claimed in claim 7, characterized in that each of said spacer profiles (14) is positioned horizontally between two adjacent panels (A), with the latter being in a vertically superimposed relationship, or between a partition wall (P) and the floor (F) and/or the ceiling (S) of the room.

15

9. A structure as claimed in claim 7, characterized in that each of said spacer profiles (14) is positioned vertically between two partition walls (P), or between a partition wall (P) and a wall of the building.

20

10. A structure as claimed in claim 1, characterized in that said elongate support members (2) include at least one upper horizontal profile (16) and at least one lower horizontal profile (17) for supporting a sliding door (D), which is movable between a closing position and an opening position.

25

11. A structure as claimed in claim 10, characterized in that said upper horizontal profile (16) has a central portion (4'') and at least one end portion (6''), which are substantially equal to the corresponding central portion (4) and end portion (6) of said base profile (3).

30

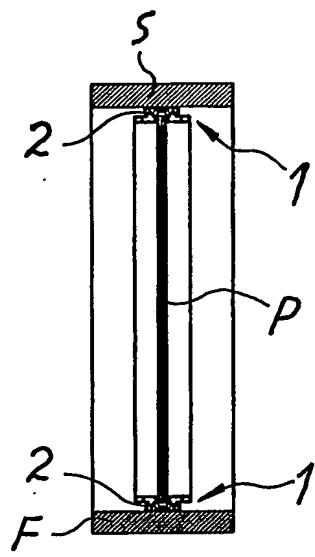
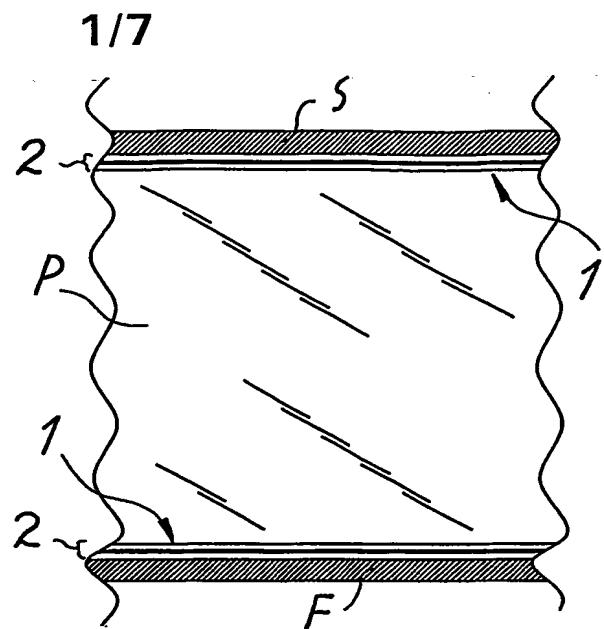
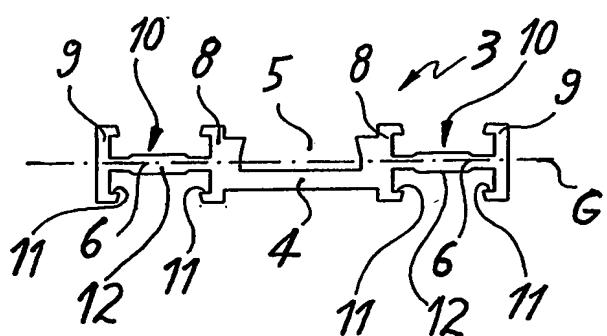
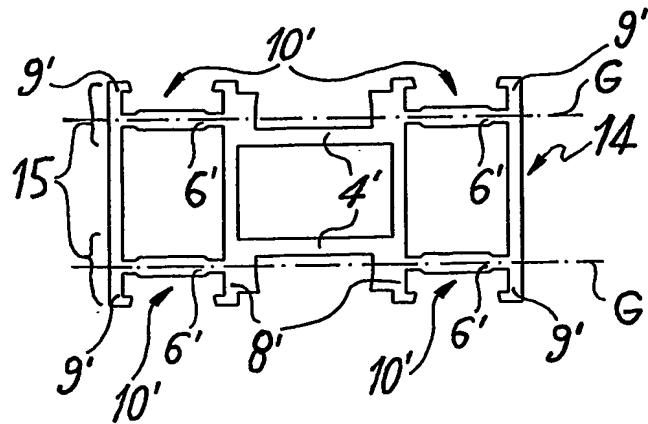
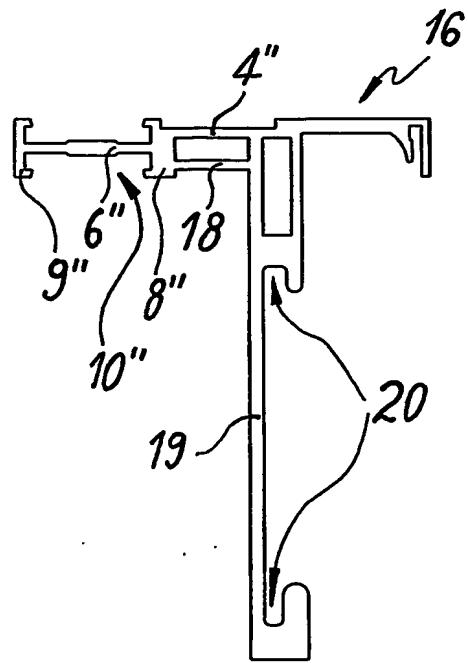
12. A structure as claimed in claim 11, characterized in that said upper horizontal profile (16) further has a third appendage (19), which protrudes along a direction substantially orthogonal to said central portion (4'').

13. A structure as claimed in claim 12, characterized in that third protruding appendage (19) has a rail (20) for guiding one or more wheels or rollers (21) whose axles are integral with the sliding door (D).

5        14. A structure as claimed in claim 11, characterized in that said upper horizontal profile (16) further has a second central portion (18), to enhance the rigidity of said upper horizontal profile (16).

10        15. A structure as claimed in claim 10, characterized in that said lower horizontal profile (17) has a central portion (4'') and at least one end portion (6''), which are substantially equal to the corresponding central portion (4) and end portion (6) of said base profile (3).

15        16. A structure as claimed in claim 15, characterized in that said lower horizontal profile (17) further has a longitudinal cavity (22), for accommodating a lower edge (E) of the sliding door (D).

**FIG. 1****FIG. 2****FIG. 3****FIG. 4****FIG. 5**

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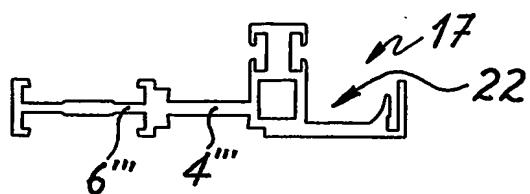


FIG. 6

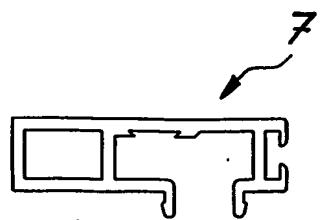


FIG. 7

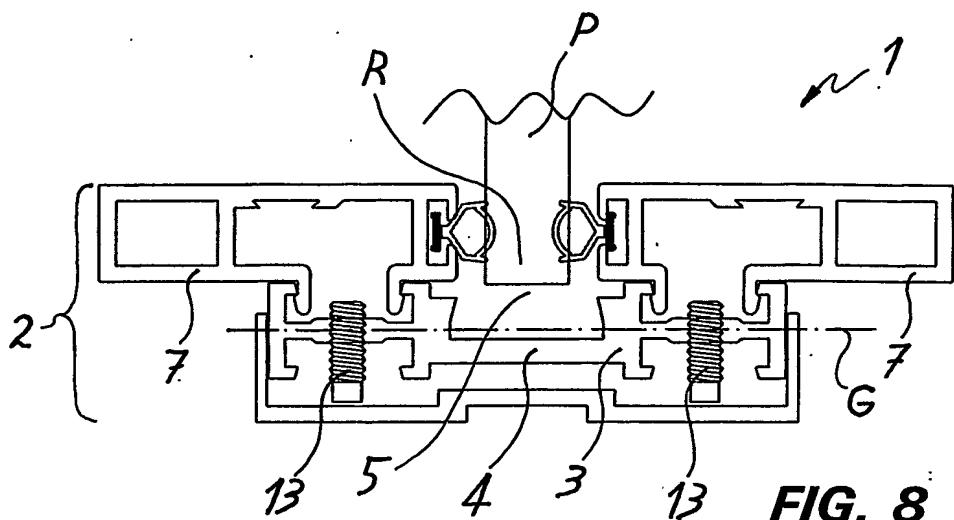


FIG. 8

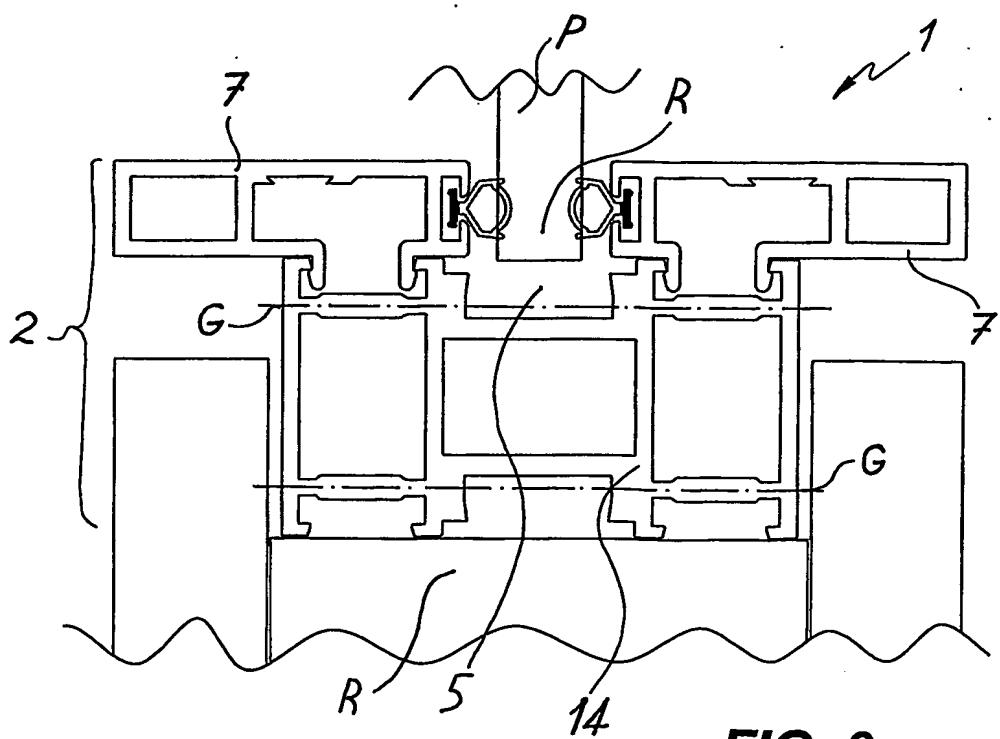


FIG. 9

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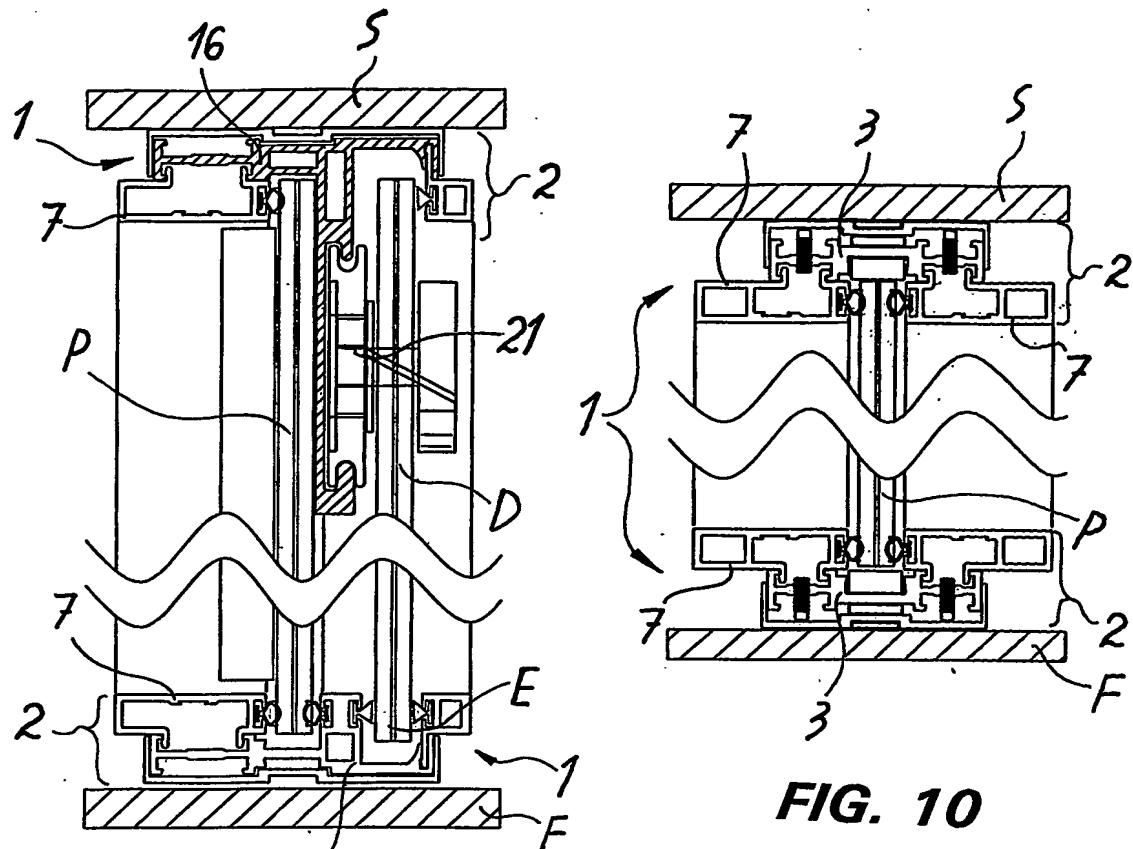


FIG. 11 17

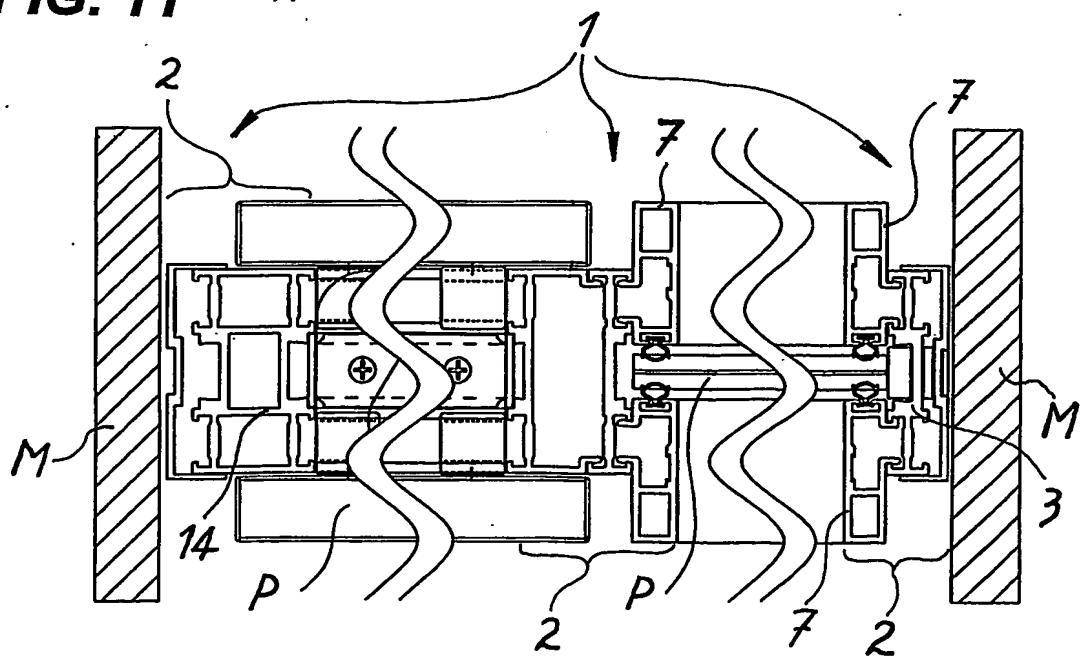


FIG. 12

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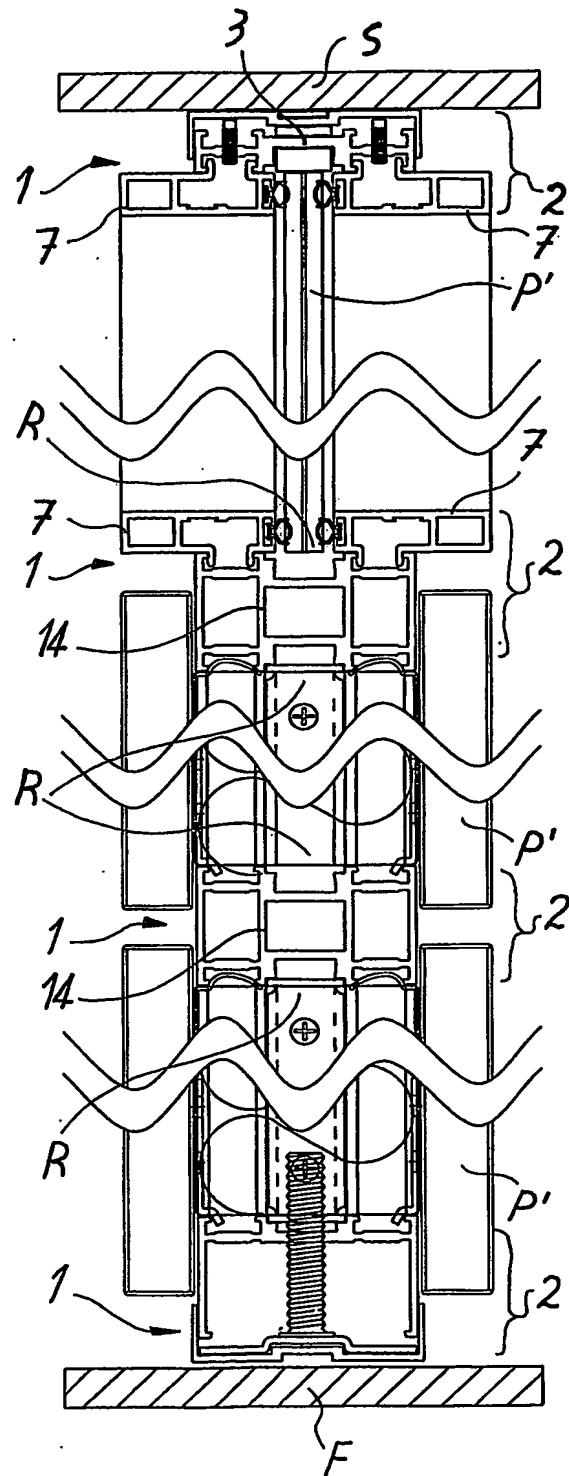


FIG. 13

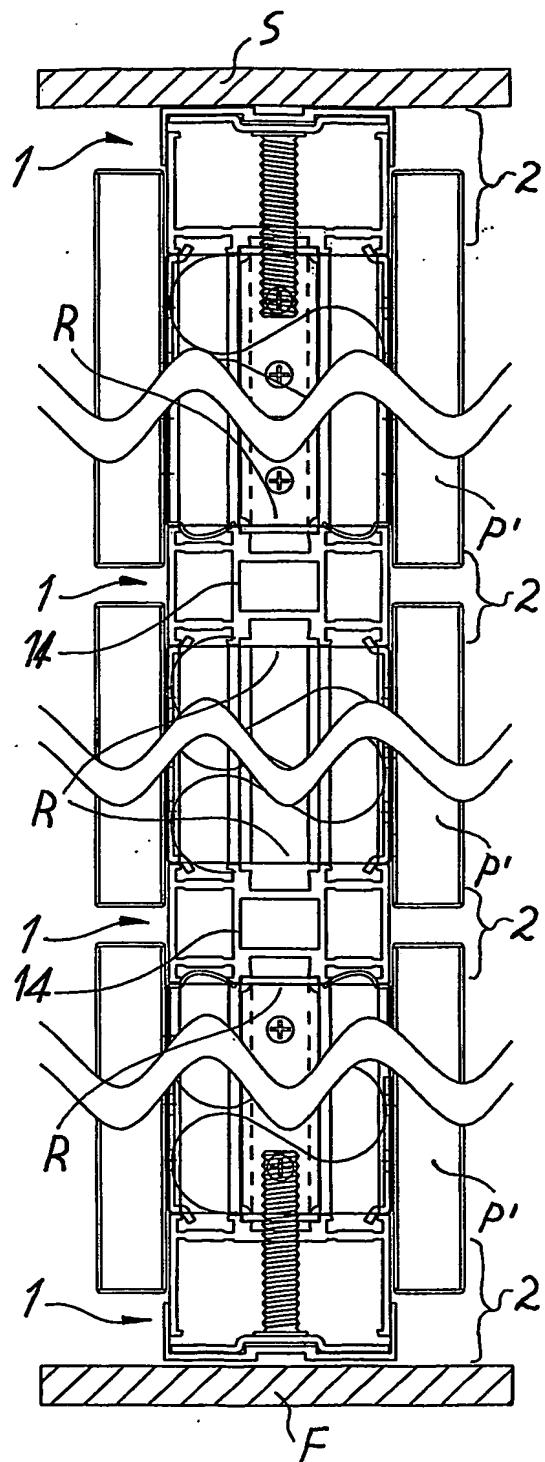
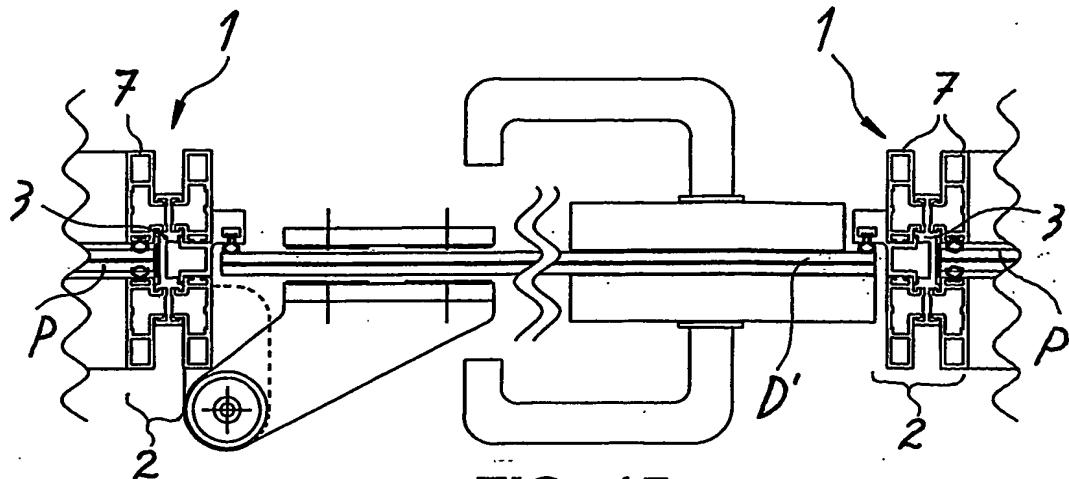
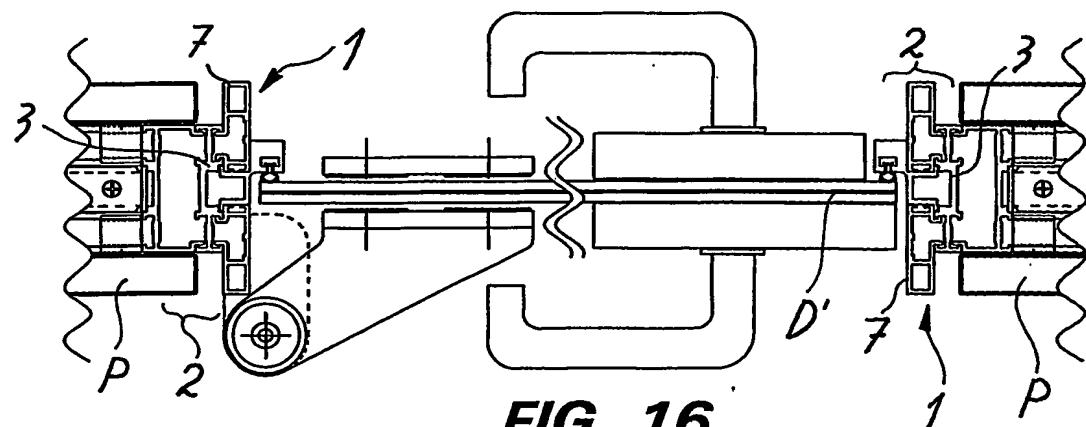
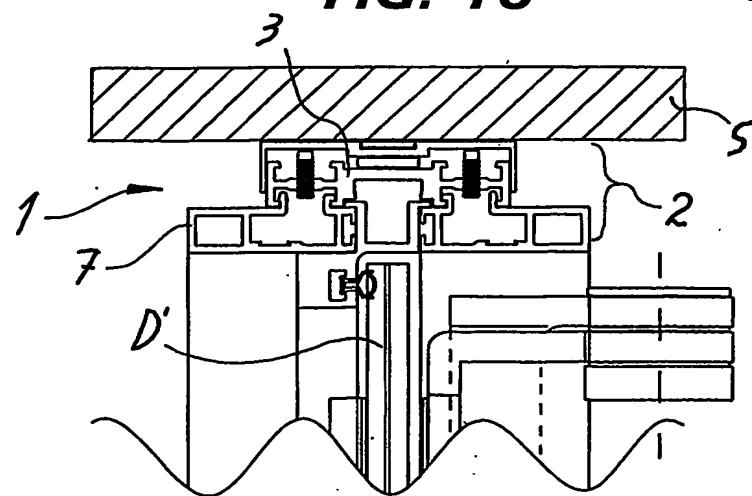


FIG. 14

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**FIG. 15****FIG. 16****FIG. 17**

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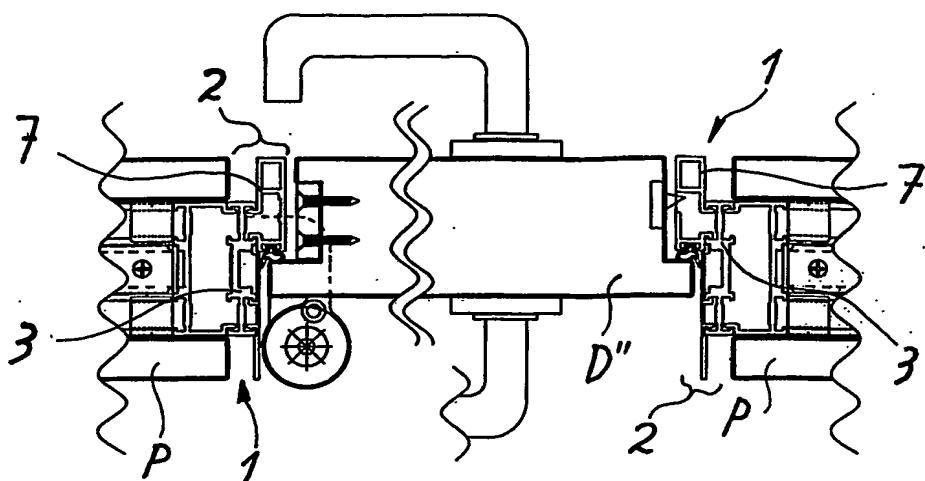


FIG. 18

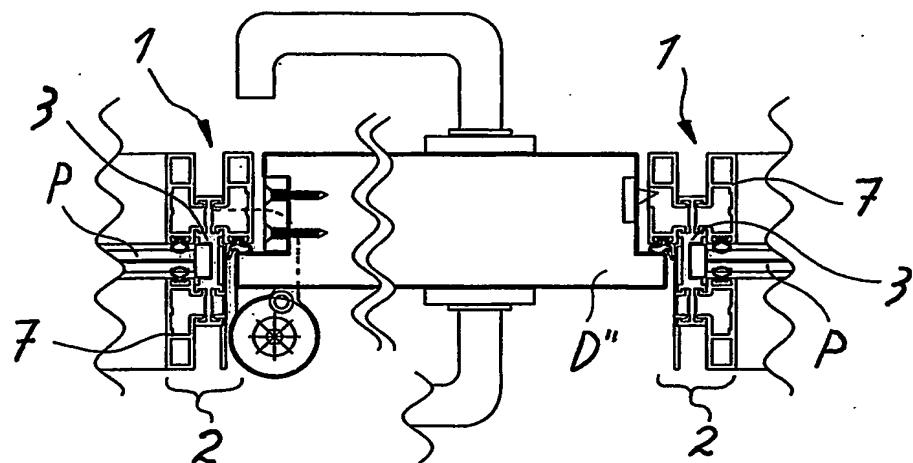


FIG. 19

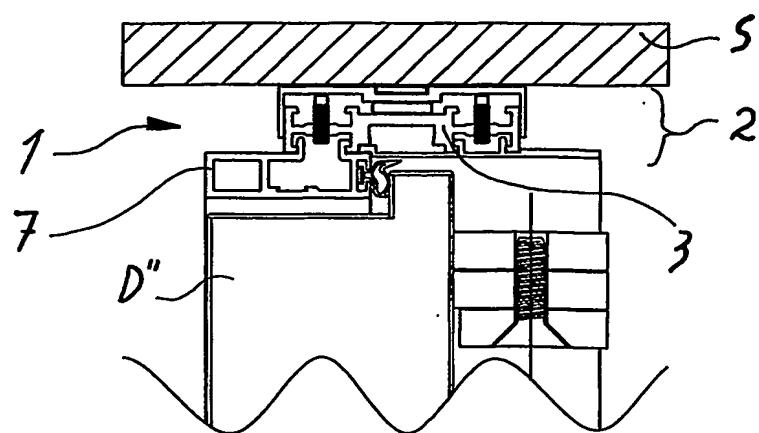
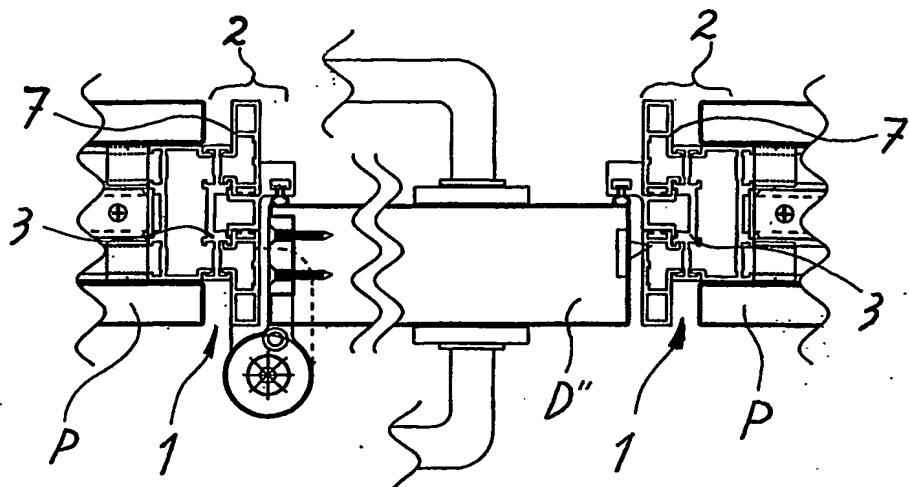
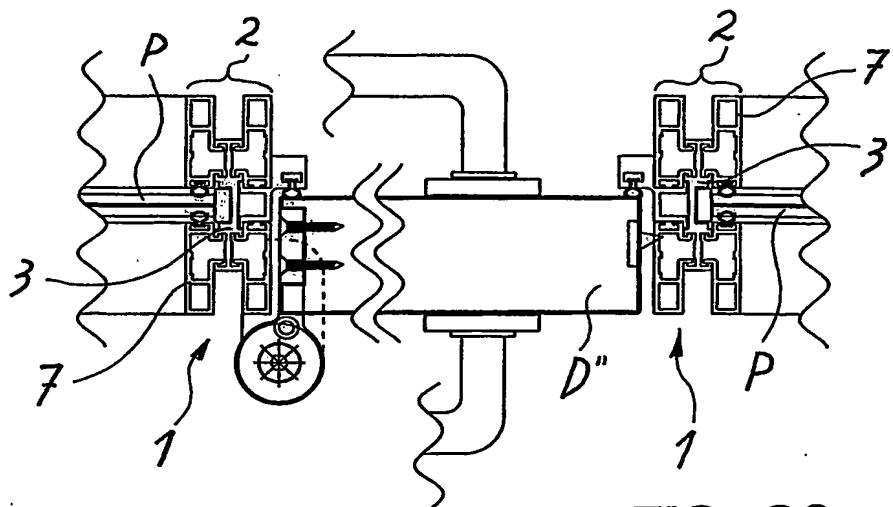
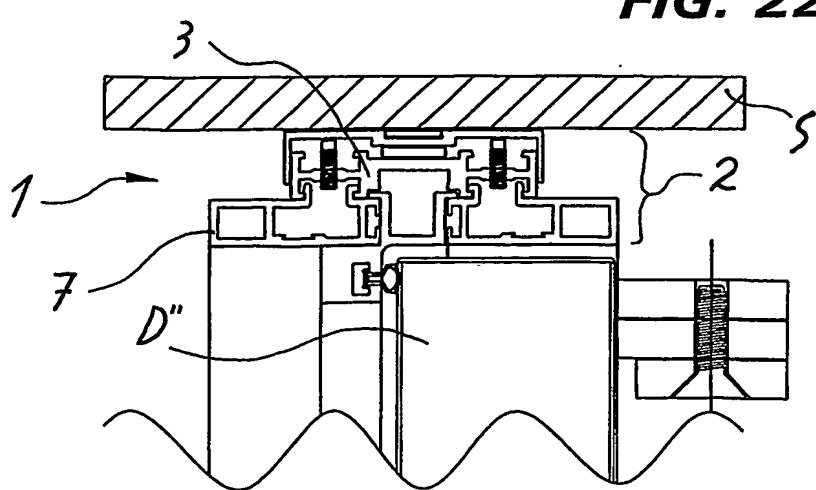


FIG. 20

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**FIG. 21****FIG. 22****FIG. 23**

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/EP2004/000922

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E04B2/74

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category <sup>a</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 309 233 A (MHR DESIGNS LIMITED) 23 July 1997 (1997-07-23) page 4, lines 24,25; figures	1-5
Y	EP 0 317 689 A (METRA METALL TRAFILATI ALLUMIN) 31 May 1989 (1989-05-31) the whole document	10-16
Y	EP 0 317 689 A (METRA METALL TRAFILATI ALLUMIN) 31 May 1989 (1989-05-31) the whole document	10-16
A	GB 2 322 663 A (WALLIS ALAN) 2 September 1998 (1998-09-02) the whole document	1
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Patent family members are listed in annex.

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25/08/2004

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